

The *proötic* is a distinct though small bone, below and in front of the squamosal. The presphenoid is plate like, and much as in the Crocodilia.

Prof. Cope thought that the Anomodontia, one of the earliest (Triassic) types of Reptilia are one of the best examples of a generalized group among the vertebrata. Thus the structure of the posterior part of the Cranium is largely that of Ichthyopterygia, and partially that of Lacertilia; of the oral parts of the cranium, the proötic and mandible, of Testudinata. The vertebral characters are partly those of Ichthyopterygia, and the sacrum and rib articulations those of Dinosauria. The peculiar presphenoid is characteristic of Crocodilia, and the osseous inter-orbital septum, of the Rynchocephalia.

The position of the posterior plate of the squamosal in Ichthyopterygia and Anomodontia seemed conclusive as the homology of that element with the bone covering the cartilaginous quadratum in Batrachia Anura, and the osseous quadratum in Urodela and Dipnoi, called tympanique by Cuvier, and temporo-mastoidean by Dugés. This bone had been already homologized with the preoperculum of Teleostei by Huxley, and it is thought that its present determination in the Reptilia established the serial homology of the preoperculum of the fish with the squamosal plate of the mammal.

Prof. Kirkwood communicated a paper "On the Mass of the Asteroids between Mars and Jupiter." (See Proceedings below.)

Prof. Cresson described the thunder storm of the 4th inst. at the Belmont Water Works.

And the Society was adjourned.

On the MASS of ASTEROIDS between MARS and JUPITER. By PROFESSOR DANIEL KIRKWOOD, Bloomington, Indiana.

According to Leverrier, the total mass of the ring of minor planets does not exceed $\frac{1}{4}$ th of the earth's mass, or $\frac{1}{1250}$ th of that of Jupiter. So great a disproportion between two adjacent planets is without a parallel. Is the fact susceptible of a probable explanation?

Were the sun transformed into a gaseous spheroid with an equatorial radius equal to the diameter of the earth's orbit, a large number of the known asteroids would, in perihelio, plunge into the solar mass and be reunited with it. Now this, in all probability, is precisely what occurred soon after the abandonment of the asteroid zone, while the solar nebula was in the process of condensation. The powerful mass of Jupiter would produce great eccentricity in parts, at least, of the primitive ring. Large portions of its matter, or a considerable number of minor planets in a state of vapor, may thus have been precipitated upon the sun before the latter had contracted within their perihelion distance. The small mass of Mars may perhaps be accounted for on the same hypothesis.